Aerospace Education News

July-August 2006

Inspiring Students To Excel

This issue is dedicated to A. Scott Crossfield for his many contributions to educators and students all across the nation.

A. Scott Crossfield - Legend and Friend to Aerospace Educators

Scott Crossfield and a few of "Crossfield's Kids" at NCASE 2004

Encouraging, humble, kind, humorous...these are just a few of the adjectives that describe Scott Crossfield. Many people know him as the famous test pilot, Scott Crossfield, but others know him as a great supporter of educators and students everywhere.

His love of flying was evident in everything he did. From talking with other pilots about the future of aviation to inspiring educators to excel in teaching children, Scott Crossfield's mission was clear - reach as many as you can so they will reach others. His knowledge and willingness to share will be truly missed by all he came in contact with. The sparkle in his eyes when talking about his passion, flying, made him near and dear to many in the aviation world.

We, at Civil Air Patrol, lost a great friend and a strong supporter of aerospace education. However, Scott's words and dreams continue on in each of us and we will carry on the work he so dearly loved. His legacy to us will remain in the educators, cadets and senior members who have benefited from his shining example and steadfast support.

Aerospace Education News

Aerospace Education News is the official aerospace education bimonthly publication of the Civil Air Patrol at CAP National Headquarters, Maxwell Air Force Base, Ala.

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If you have news, events, or ideas we might consider for the newsletter, please submit them electronically to jstone@cap.gov.

We Remember Scott Crossfield

In loving memory

JIM MALLETT, FORMER DIRECTOR, CAP AEROSPACE EDUCATION AND TRAINING
SUSAN MALLETT, 1992 "*A. SCOTT CROSSFIELD AEROSPACE TEACHER OF THE YEAR*"

As many people are well aware, in the late 1940s, through the '50s and '60s, Scott Crossfield used his tremendous aeronautical engineering knowledge to move our nation forward in the jet age to maintain air supremacy for America. He also had a vision of ensuring a prominent place for our country in the exploration of the new space frontier. In recognition of his aeronautical accomplishments, such as flying twice the speed of sound and flying to the edge of space and back, he was often referred to as "the fastest man alive" and "the world's first astronaut."

At the time Scott Crossfield accomplished phenomenal feats in aeronautics, most people could not conceive of some of the challenges that would one day face America, such as 9/11's impact on domestic airlines, the "graying" of the aerospace workforce, foreign competition hampering the U.S. commercial aircraft market, and the reduction of students pursuing the engineering degrees necessary to support our nation's future aerospace needs. Over time, there is no doubt, that Scott Crossfield's visionary ability led him to pursue a plan to help prepare our country for such challenges.

Crossfield had a plan. Although he didn't carry it around in a laptop computer, with numerous PowerPoint slides, it was obvious to anyone who knew him what his objective was. His objective was to enthuse teachers about the wonders of aerospace. In turn, these teachers would inspire their students to pursue aerospace careers. To accomplish this, he selected a strong ally---Civil Air Patrol and its National Congress (now Conference) on Aviation and Space Education (NCASE). For over 30 years, he was a dedicated supporter of the National Congress, never missing an opportunity to share his respect for and confidence in the teachers of America. With deep appreciation for the powerful influence teachers have on the future leaders of our nation, he established the "A. Scott Crossfield Aerospace Teacher of the Year" award presented at NCASE. For over 18 years, this award has recognized, and financially rewarded, many outstanding aerospace educators who continue to carry his vision forward.

Scott Crossfield often said, "Leadership casts a long shadow." This expression most certainly describes Scott, himself. His visionary legacy will live on in the hearts and the minds of every teacher he touched and every young person inspired by him to rise onward and upward in pursuit of one's dreams. Farewell, dear Scott, the ultimate gentleman. You will never be forgotten.

Scott Crossfield and Susan Mallett at NCASE 2003

"His visionary legacy will live on in the hearts and the minds of every teacher he touched and every young person inspired by him to rise onward and upward in pursuit of one's dreams."

Memories of a great friend.....

To **Judy Rice**, CAP's Chief of Outreach and Director of NCASE, Scott Crossfield was a mentor and friend. They spent countless hours talking about airplanes, airports, flight plans, and all the wonders that two aviators share.

Judy met Scott Crossfield when she worked at the Experimental Aircraft Association (EAA). Scott spoke at youth events during the air show. They hit it off immediately due to their love of airplanes, flying and the passion for growing the future and motivating young people to share the aviation "bug." From that meeting on, Scott and Judy talked many times by telephone or in person about many topics, but the focus was always on flying.

One story about Scott's last visit to Maxwell especially came to mind when asked about Scott as a person. On Monday evening, April 17, the local chapter of AFA had a barbeque dinner celebrating a retiring Colonel. Scott was Judy's guest at the ceremony. When the host asked Scott to say a few words to the group, he quietly declined saying that the evening was not about him, but about the accomplishments of the Colonel. After much persisitence by the host, Scott eventually agreed. Afterwards, when asked why he had agreed, he replied, "They were gracious in sharing their food and hospitality with me, this was the least I could do." This was Scott Crossfield, an unselfish and humble person.

Scott Crossfield and Judy Rice developed a friendship over the years that was open and casual. He was easy to talk with and fun to be around. His enthusiasm and committment to education and flying were the characteristics that drew people to him. As Judy says of Scott, "He will be greatly missed by all and I will especially miss our long conversations about the wonders and excitement of flying."

Some of Crossfield's Kids Remember.....

Cheryl Cotton and Scott

"The first thing that comes to mind as I remember Mr. Scott Crossfield is that he was a gentleman. He was not impressed with what he had done, but what you had accomplished in promoting his love for education via aerospace educational activities. As an elementary teacher, I was impressed with the impact his elementary teachers had made on him and his indebtedness to them for making him the person he became. Mr. Crossfield was a gentle giant in so many fields and because of his efforts the field of aviation advanced immeasurably. What a legacy he imparted with the generosity of his time, talents and finances to promote aerospace! He was such a blessing to the lives of others. He lived life to the fullest. I am by far a better person for knowing him."

Kaye Ebelt received the A. Scott Crossfield Aerospace Teacher of the Year Award in 2003. Kaye says, "It was truly a great honor to receive this award from the man whose name is associated with historical greatness. Scott Crossfield is an example of how a teacher inspired a student to excel. My goal is to motivate my students to reach their potential."

Kaye Ebelt and Scott

Ben Millspaugh and Scott (Spring 1990)

"A great pilot has passed but his incredible spirit lives on."
Ben Millspaugh met Scott Crossfield at NCASE in 1984. He was impressed with Scott's "down to Earth" attitude and his willingness to talk to every teacher-participant. Ben Millspaugh received the A. Scott Crossfield Aerospace Teacher of the Year Award in 1989. Dr. Millspaugh knew two sides of Scott. One was the "classroom involvement" and the other was "pilot-to-pilot."

Scott Crossfield and NCASE.....

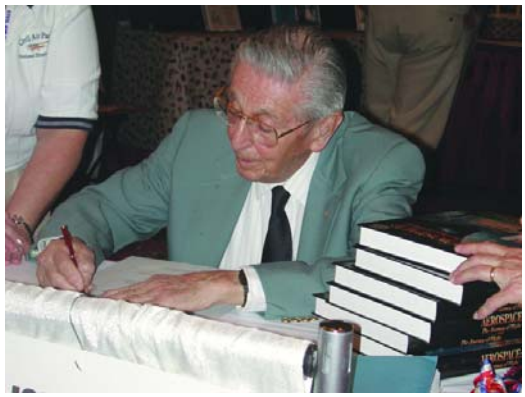
Scott Crossfield has been involved in the National Conference on Aviation and Space Education (NCASE) as a supporter and speaker since 1986. In this year, the first A. Scott Crossfield Aerospace Education Teacher of the Year Award was presented. This award was established to recognize and reward aerospace education teachers for outstanding accomplishments in aerospace education and for their dedication to the students they teach. At that time, Scott established a fund for the award. Since then, Scott and other aerospace greats have donated their honoraria to the fund. This fund is supported by the generosity of donations provided by individuals and organizations. Sally Crossfield Farley and Tony Crossfield (Scott's daughter and son) will be taking on the duties of the award with help from Kevin Kochersberger, the Wright Flyer pilot, so that this great award recognition can continue to reward teachers and reach classrooms across the country.

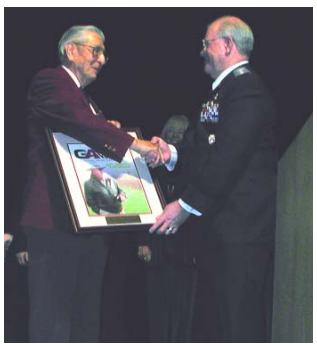
Not only did Scott Crossfield give of his resources to provide a reward for teachers at NCASE, he also enthusiastically participated in Hangar Talk and many General Assemblies at NCASE. He was available to sign books, talk with participants, or do whatever he could to help make NCASE a success. He was the quiet, unassuming leader that things just naturally revolved around. People, including some of the presenters, were in awe of Scott, but he made them feel at ease and let them know that he was in awe of their accomplishments. Many people who met him for the first time were impressed with his graciousness and how comfortable he made them feel.

To honor Scott Crossfield at NCASE 2006, Hangar Talk, parts of the General Assembly and the Crown Circle Banquet will be dedicated to him. There will also be a special meeting for the Crossfield teachers.

We have lost a great American, but want to celebrate his life and what he gave of himself to others. He is truly a "national treasure", and we will always keep him in our thoughts and memories.

Scott Crossfield at NCASE





ROLE MODEL - A. SCOTT CROSSFIELD
FIRST TO THE EDGE OF SPACE IN THE X-15

This activity came from AEX II Volume 1

Objective: This activity will give the students/cadets a background on the legendary X-15 rocket pilot, A. Scott Crossfield and students/cadets will build a model of the aircraft for a unit in aerospace education.

BACKGROUND

A. Scott Crossfield was born in Berkeley, California, on October 2, 1921. His place in aerospace history is that of a great test-pilot and to many, he is considered to be America's first true astronaut. Long before the Space Shuttle, the X-15 aircraft, which Scott pioneered, routinely flew into and back from the edges of space. Scott was also the first man to break Mach 2, or twice the speed of sound.

As a child, Scott had difficulty with a disease known as rheumatic fever. This was complicated with another disease, pneumonia. While trying to get well, young Scott had much time to read and he took an avid interest in aviation. His health finally started to improve in his early teens - enough so that he could work part time delivering newspapers.

One of the "stops" on his paper route was Wilmington airport and he soon struck up a friendship with the owner of a flying school. In return for free paper delivery, he was able to barter for flying lessons. By the time he graduated from high school, he was determined to become a great pilot like Jimmy Doolittle or Boeing's test pilot, Eddie Allen.

Scott entered college at the University of Washington and eventually completed degrees in aeronautical engineering. He enlisted in the Navy and graduated from flight training in 1942. Crossfield was a gunnery instructor and ended up in the South Pacific as a Corsair pilot.

After the war, Scott returned to the University of Washington to further his education and became the Chief Operator of the F.K. Kirsten Wind Tunnel. This position led to another opportunity and he became an aeronautical research pilot for the National Advisory Committee on Aeronautics. The N.A.C.A. was the forerunner was the forerunner of NASA and its activity was at the very leading edge of manned space flight research in the 50s. It was during this time that Scott flew the Douglas D558-II Skyrocket to Mach 2. At the time, he was the "Fastest Man Alive."

As a test pilot, Crossfield had also flown numerous other significant aircraft including the X-1 and most of the later X-series (X signifies experimental) aircraft. His most notable involvement in this series was the X-15.

From 1955 to 1961, Scott was the design specialist and chief engineering pilot for North American Aviation, builder of the X-15. He was involved in all phases of X-15 specification and design engineering. His work was instrumental in the development of cockpit and control systems, engine systems, and aircraft structures. Not only was Scott an outstanding engineer, he was recognized as one of the finest test pilots of his day.

Crossfield later became an executive for Eastern Airlines from 1967 to 1973. Then from 1974 to 1975, he was Senior Vice President for Hawker Siddley Aviation, setting up its U.S. subsidiary for design, support, and marketing of the HS-146 transport in North America. From 1977 until his retirement in 1993, he served as technical consultant to the House Committee on Science and Technology, advising committee members on matters relating to civil aviation. Upon his retirement in 1993, NASA Administrator Daniel S. Goldin awarded him the NASA Distinguished Public Service Medal for his contributions to aeronautics and aviation over a period spanning half a century.

In 2002-2003, Crossfield served as technical adviser for the Countdown to Kitty Hawk project, which successfully built and flew an exact reproduction of the 1903 Wright Flyer, as well as several of the Wright brothers' earlier gliders. That project culminated with the airplane's presence at the national centennial of flight celebration at Kitty Hawk in December 2003. Crossfield was a founding member and fellow in the Society of Experimental Test Pilots.

Crossfield held single- and multi-engine type ratings and an instrument rating for single-engine general aviation aircraft. In the late 1980s, after 20 years without much flying time, he purchased a 1961 Cessna 210A in which he eventually logged over 2,000 hours. By his 80th birthday in 2001, Crossfield was still flying 200 hours per year with a private pilot/instrument rating.

Throughout his life, Crossfield advocated aerospace education and was a strong supporter of the Civil Air Patrol (USAF auxiliary) and, in particular, CAP's aerospace education program. He created the A. Scott Crossfield Aerospace Education Teacher of the Year Award to recognize and reward teachers for outstanding accomplishments in aerospace education and for their dedication to the students they teach in kindergarten through 12th grade at public, private or parochial schools. Additionally, CAP senior members can qualify for the A. Scott Crossfield Aerospace Education Award. This recognition program is for CAP senior members who have earned the Master Rating in the Aerospace Education Officer Specialty Track.

Crossfield died on Apr. 19, 2006 when his private plane crashed near Ranger, Ga., during a flight from Prattville, Ala., to Manassas, Va., near his home.

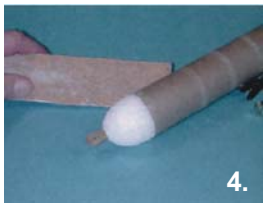
The X-15,the first airplane to fly into and back from space and the man who is considered by many historians to be America's first true astronaut, A. Scott Crossfield.

X-15 BUILDING INSTRUCTIONS

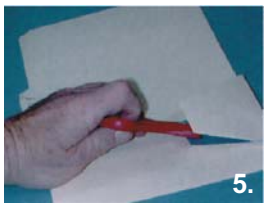
A craft store Easter egg is used to make the nose cone. Using a pencil, punch a hole through the egg as shown.

A #64 rubber band is pushed through the hole. Next a soda straw is pulled through one of the loops. This will keep the rubber band from pulling through when stretched for launching.

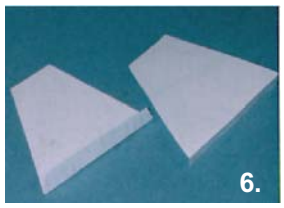
The Easter egg assembly will be inserted into a paper towel tube. Hot glue is used to keep the egg in place. Run a bead around the opening of the tube as shown.



Once the glue sets up, trim the Easter egg "nosecone" with sandpaper.



Using the template, make wings, stabilizers and fin from a file folder or large index card.

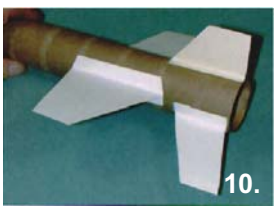


The edges of the wings are folded as shown, one up and one down.

The builder can use most any kind of adhesive, however, the new spray glues work great.

The two halves of one wing are glued together so that the folded portion has one up and one face down.

For a really strong bond, it is recommended that the paper wings be hot-glued to the body tube.



The vertical fin and horizontal stabilizer are glued into position as shown.

Your X-15 will look like this when completed

National Standards

Science Standards:

Standard A: Science as Inquiry

Standard B: Physical Science
- Motions and forces

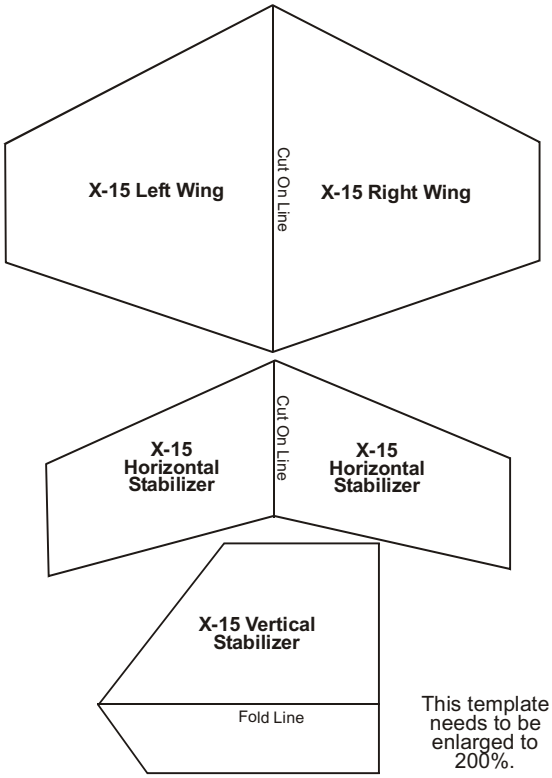
Standard E: Science and Technology
- Abilities of technological design
- Understandings about science and technology

Standard G: History and Nature of Science
- Science as a human endeavor
- History of science

Unifying Concepts and Processes
- Evidence, models, and explantion

Technology Standards:

7. Understanding of the influence of technology on history.
8. Understanding of the attributes of design.
10. Understanding of the role of troubleshooting, research and development.
11. Ability to apply the design process.



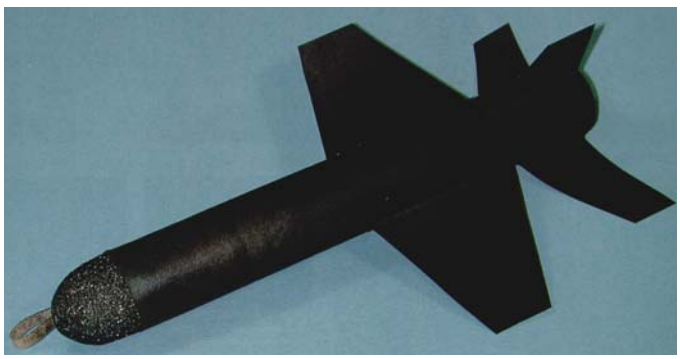
This template needs to be enlarged to 200%.

How could you modify your x-15 to make it:

1. Fly faster?
2. Fly farther?
3. Shorten the flight distance?
4. Fly straighter?
5. Fly to a specific target?

Create an experiment to test for each quetion above. Write your test procedure and results in a scientific format similar to the one below:

Step 1: State the problem.
Step 2: Research the problem.
Step 3: Form a hypothesis.
Step 4. Test the hypothesis and record data.
Step 5: Draw conclusions from the data.



One of Scott Crossfield's favorite education stories, which he shared with many of his teacher friends.....

What Teachers Make

The dinner guests were sitting around the table discussing life. One man, a CEO, decided to explain the problem with education. He argued, "What's a kid going to learn from someone who decided his best option in life was to become a teacher?"

He reminded the other dinner quests what they say about teachers. "Those who can, do. Those who can't teach." To stress his point he said to another guest, "You are a teacher. Be honest, what do you make?"

The teacher, who had a reputation for honesty and frankness replied, "You want to know what I make? I make kids work harder than they ever thought they could. I make a C+ feel like the winner of the Congressional Medal of Honor. I make kids sit through 40 minutes of study hall in absolute silence."

"You want to know what I make? I make kids wonder; I make them question; I make them criticize and apologize and mean it. I make them write. I make them read, read, read. I make them show all their work in math and perfect their final drafts in English. I make them understand that if you have the brains, and follow your heart, and if someone ever tries to judge you by what you make, then you must pay no attention because they just didn't learn."

The teacher paused and the continued, "You want to know what I make? I MAKE A DIFFERENCE. What do you make?"